

REMARKS/ARGUMENTS

Favorable consideration of this application is respectfully requested. Applicant has amended claims 1 and 3, canceled claims 2 and 4-19 and added new claims 20-31. Favorable reconsideration of this application is, consequently, earnestly solicited in view of the following remarks. Applicant gratefully appreciates the interview with Examiner Waks on July 18, 2005, and has made a good faith attempt to amend the claims to overcome the art of record.

Amendment to the Drawings:

Replacement formal drawing sheets are submitted herewith for Figures 19A, 19B, 20, 21 and 23. Replacement Figures 19A and 19B correspond to the description on pages 33-36 of the detailed description. No new matter has been added.

Amendment to Abstract:

Applicant replaced the Abstract with a new Abstract corresponding to the amended claims and has limited the paragraph to a single paragraph not exceeding 150 words in length.

Amendments to Brief Description of the Drawings:

Applicant has also amended the "Brief Description of the Drawings" to correct Figure 9A by correctly identifying the Figure as Fig. 9 as shown on Figure 9 and found in the description on page 15, lines 7 and 27 and on page 22, line 22. Fig. 10A has been added to correctly identify the figures on the drawing sheet and as described in the

description on page 23, line 9. Examiner also alleged that Figure 8B listed in the brief description of the drawings is missing. A drawings sheet was submitted including Figures 8A and B on one drawing sheet. Figure 8B is addressed in the description on page 15, at line 5 and on page 22, at line 5. Thus, Applicant requests removal of the objection in regard to Figures 8B, 9A (now 9) and Figures 10A and 10B.

Amendments to the Description of the Preferred Embodiment:

The description has been checked and amended to correct typographical and grammar type language. No new matter has been entered.

For example, the paragraphs on page 35, lines 6-23, page 36, lines 1-13 and page 36, lines 14-18 have been amended to remove inappropriate text that was inadvertently included in the description as originally filed.

The paragraphs starting on page 36 at line 19 and ending on page 37 at line 4 have been amended to more clearly describe the expander shown in Figures 20 and 21. The new description of the expander was previously described in U.S. Patent Application No. 10/342,954 (now U.S. Patent 6,758,659) which was incorporated into the subject Applicant believes that no new matter has been added by the previous reference thereto on page 19, lines 23-25. The page 19 paragraph has been amended to update the status of the previously pending patent application.

The paragraphs starting on page 37 at line 5 and ending on page 38 at line 4 have been amended to more clearly describe the system shown in Figure 20 and the operation of the system. The paragraphs previously describing the system, on page 38 at lines 5-23 have been deleted. No new matter has been added in the amended paragraphs.

The paragraph on page 38 at lines 5-13 has been amended to refer to the correct figure. The paragraph at lines 14-23 has been amended to clarify the operation of the system and Applicant believes that no new matter has been added.

The paragraphs on page 39 between lines 1 and 19 have been amended to clarify figure numbers and correct language. No new matter has been added.

A new paragraph has been added to page 40 between lines 13 and 14. The new paragraph more clearly describes the system configuration shown in Figure 21, thus Applicant believes that no new matter has been added.

The paragraph on page 40, lines 14-19 was amended to correctly identify the figure to which the description is directed by changing Fig. 20 to Fig. 21. The paragraph on page 41, lines 21-23 was amended to refer to Fig. 21 and to correct the designator used to identify the receiver 6900 and absorber 6600 as shown in Fig. 21.

The paragraph on page 40 at lines 20-23 has been amended to correct a typographical error.

On page 41, the paragraphs at lines 7-20 have been amended to correct typographical errors.

The paragraphs starting on page 42, at line 15 and ending on page 43 at line 4 were amended to refer to Fig. 21 and to correctly identify the receiver 6900 (not absorber 6100) as the component that pump 6950 pumps liquid from and that the liquid is pumped through the absorber 6600 (not 6100).

The paragraphs on page 43, lines 5-18 have been amended to corrected a typographical error, lines 15-18 have been amended to clarify that the heat exchanger can

be a heat exchanger as is well known in the art; and the last paragraph has been emended to correctly refer to Fig. 21.

The paragraphs one page 45 between line 13 and line 15 were amended to correct typographical errors.

The paragraph on page 46, lines 6-9 has been amended to correctly identify the Figures to which the description refers, thus Fig. 20 has been changed to Fig. 21 and Fig. 22 has been changed to Fig. 23. The paragraphs starting on page 46 at line 20 and ending on page 47 at line 19 have been amended to correct typographical errors. Two typographical errors were also correct on page 48 between lines 4 and line 24.

Thus, the amendments to the specification have included no new matter.

Amendments to the Claims:

Claim Objections:

Claim 13 was objected to because it did not comply with MPEP §608.01(m) that requires each claim to begin with a capital letter and end with a period. Claim 13 has been cancelled. Thus, Applicant requests the Examiner remove the objection to claim 13.

Claim Rejections – 35 USC §112:

Claim 2 was rejected as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant believes as the invention because claim 2 improperly depended from claim 2. Applicant has cancelled claim 2, thus removal of the rejection is requested.

Claim Rejections – 35 USC §102:

Claims 1, 2, 5 and 19 were rejected under 35 U.S.C. 102(e) as being anticipated by Erickson et al. (Erickson), U.S. Patent No. 6,269,644. Claims 2, 5 and 19 were cancelled. Claim 1 has been amended to overcome the cited reference. Structure has been added to claim 1 to describe the method corresponding to the system shown in Figure 20. No new matter has been added. Applicant believes that claim 1, as amended, overcome the anticipation rejection, thus removal of the rejection is respectfully requested.

Claims Claims 8, 11, 13, and 15-18 were rejected under 35 U.S.C. 102(b) as being anticipated by Gohee (U.S. Pat. No. 3,505,810). Examiner alleges that Gohee discloses the invention, as described and claimed, in the subject application. While the system and methods, at first glance may appear to be similar, the system operate under different pressures and temperatures and use different components. As a result, the invention described by Gohee operates under adiabatic expansion pressures and temperatures which the present invention operates under pressures that are lower than adiabatic expansion pressure.

First, Gohee's system is based on the function of the compressors, in order to liquefy a refrigerant by cooling it. The present application does not include condensers. Instead, the system of the present invention liquefies vapor by letting it do work, converting the heat energy of the vapor to mechanical energy. Second, Gohee's chemisorption circuit is a refrigeration device only. The chemisorption circuit does not drive the expander. The expander is fed with a physically separated second ammonia loop. In the system of the present invention, the chemisorption circuit is in flow series with the expander, driving the expander directly. Therefore, although some of the

components in Gohee are the same as the components used in the present invention, the similarity stops there.

Claims 8, 11, 13, and 15-18 have been cancelled, thus Applicant requests removal of the rejection.

Claim Rejections – 35 USC §103:

Claims 3 and 4 were rejected under 35 U.S.C. 103(a) as being unpatentable over Erickson et al (US 6,269,644) in view of Smith et al. (GB 2294294A). Claim 3 has been amended to clarify the configuration of the closed loop system that Applicant regards as the invention as shown in Figure 20. No new matter has been added. Applicant believes that amended independent claim 3 overcomes the 35 U.S.C. 103 (a) rejection and requests removal of the rejection.

Claims 6 and 7 were rejected under 35 U.S.C. 103 (a) as being unpatentable over Erickson et al. in view of Edwards and in view of Honigmann, respectfully. Claims 6 and 7 have been cancelled, thus removal of the rejection is requested.

Claims 9 and 10 were rejected as 35 U.S.C. 103(a) as being unpatentable over Gohee. The temperatures claimed in independent claims 9 and 10 have been added to independent claims 1, 3, 20 and 21, however, for the reasons provided in regard to Claims 8, 11, 13, and 15-18, applicant believes that the Gohee reference has been overcome in regard to amended independent claims 1 and 3 and new claims 20 and 21. Claims 9 and 10 have been cancelled, thus removal of the rejection is requested.

Claim 14 was rejected under 35 U.S.C. 103 (a) as being unpatentable over Gohee in view of Cassidy and Erickson. The limitations previously claimed in claim 14 have been added to amended claims 1 and 3 and new claims 20 and 21. Further, as noted by

the Examiner, Cassidy discloses a collected fluid being 100% liquid while Gohee discloses a 40% vapor and 60% liquid. For the reasons provided in regard to Claims 8, 11, 13, and 15-18, applicant believes that the Gohee reference has been overcome in regard to amended independent claims 1 and 3 and new claims 20 and 21. In regard to Cassidy, the systems are different. First, Cassidy removes uncondensed vapor with a vacuum pump for the purpose of producing a vacuum. In the subject application, the vacuum is produced by either surface condensing or by using a chemisorption circuit as claimed in amended claims 1 and 3 and new claims 20 and 21.

Second, In Cassidy, the abentropic engine works under full pressure from the main turbines exhaust. There is no volumetric expansion. Since there is no change in volume, there will be no change of internal energy and no condensate will form under work. Unlike Cassidy, the subject systems and methods use volumetric expansion in a displacement expander (which is not a turbine) of a wet, or dry saturated vapor from a heated vapor pressure generator. 60% of the vapor will condense in the expander from performing work. The scroll expander produces shaft work by expanding relatively high pressure and temperature vapor in discrete pockets, isolated from the inlet and exhaust manifold, which undergo decreasing temperature and pressure.

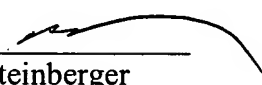
For these reasons, Applicant believes that amended claims 1 and 3 and new claims 20 and 31 overcome the rejection. Furthermore, claim 14 has been cancelled, thus removal of the rejection is requested.

New claims 20 and 21 have been added to more clearly claim the method and system, respectively, that application regards as his invention as shown in Figure 21. Because new claims 20 and 21 claim the method and system, respectively, as shown in

Figure 21, Applicant believes that no new matter has been added. New dependent claims 22-31 have been added to further limit the positive displacement expander to a scroll expander, rotary vane or Wankle-type engine having a fixed ration volume as described in the specification. Use of the various types of positive displacement expanders is found in the specification on page 30, lines 17-9 and page 40 line19.

In view of the foregoing considerations, it is respectfully urged that claims 1, 3, 20-31 be allowed. Such action is respectfully requested. If the Examiner believes that an interview would be helpful, the Examiner is requested to contact the attorney at the below listed number.

Respectfully Submitted;



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Amendments to the Drawings:

The attached 4 pages of drawings include changes to Figures 20, 21 and 23. These drawings, which include Figures 18, 19A, 19B 20, 21 and 23, replace the original sheets.

Attachment: 5 - Replacement Sheets